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Abstract

Causal realism is the view that causation is a structural feature of reality, a power inherent in the world to produce effects independently of the existence of minds or observers. This article suggests that certain problems in the philosophy of mind are artefacts of causal realism because they presuppose the existence or possibility of a real causal nexus between the 'physical' and the 'mental'. These dilemmas include (but are not necessarily limited to) the 'hard problem' of consciousness and the problems of free will and mental causality. Since the ostensible causal nexus cannot be directly perceived, it is sublimated into obscure and elusive phenomena along the purported mental causal chain. The antithesis of causal realism, and the proposed solution to the problems above, is causal anti-realism: the view that causation is not a fundamental property of the world, but of how observers purposively interpret 'the world'. Causal anti-realism is compatible with causal pragmatism, which allows for the practical use of causal terms. Causal anti-realism denies the possibility of ontological reduction and is therefore incompatible with materialism and with materialist assumptions about the atom. The article concludes that causal anti-realism is at least prima facie reconcilable with idealism.

> The law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm.
>
> —Bertrand Russell

This article presents the case that certain problems in the philosophy of mind are conceptual artefacts of causal realism. These dilemmas include (but are not necessarily limited to) the 'hard problem' of consciousness and the problems of free will and mental causality. Causal realism is the view that causation is a structural feature of reality, a power inherent in the world to produce certain effects, independently of the existence of minds or observers

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(Weber 2008, 59). The antithesis of causal realism, and the proposed solution to the problems above, is causal anti-realism (also known as causal constructivism): the thesis that causation is not a fundamental property of a mind-independent world, but of how some observers purposively interpret 'the world' (Weber 2008, 60). Beyond the foregoing general stipulations, causal anti-realism (for the purpose of this article) is not committed to any particular account of the *specific* origin of the notion of causation, but it would be worthwhile to mention two of the most common such constructivist accounts, in reply to the initial objection that causal anti-realism cannot explain how we came to have the idea of causation, if the notion is not derived from the actual phenomenon in a mind-independent 'external world'.

One account that is consistent with causal anti-realism is the anthropomorphic view, which postulates that the idea of causation is derived by analogy from intentional human actions. One of the earliest exponents of the anthropomorphic theory was Thomas Reid.

> It is very probable, that the very conception or idea of active power, and of efficient causes, is derived from our voluntary exertions in producing effects; and that, if we were not conscious of such exertions, we should have no conception at all of a cause, or of active power, and consequently no conviction of the necessity of a cause of every change which we observe in nature. (Reid 1788, 278)

A more contemporary statement of the anthropomorphic thesis is that of J. L. Austin.

> 'Causing', I suppose, was a notion taken from a man's own experience of doing simple actions, and by primitive man every event was construed in terms of this model: every event has a cause, that is, every event is an action done by somebody — if not by a man, then by a quasi-man, a spirit. When, later, events which are not actions are realised to be such, we still say that they must be 'caused', and the word snares us: we are struggling to ascribe to it a new, unanthropomorphic meaning, yet constantly, in searching for its analysis, we unearth and incorporate the lineaments of the ancient model. (Austin 1961, 150-151)

A second account that accords with causal anti-realism is the maximally deterministic approach, in which the notion of causation is taken to be derived from (and equivalent to) logical entailment. One of the most well-known exemplars of this logically deterministic view was Baruch Spinoza, who stated that from "God's eternal nature . . . all things have necessarily flowed, or always followed, by the same necessity and in the same way as from the nature of a triangle it follows, from eternity and to eternity, that its three angles are equal

to two right angles" (Spinoza 1985, I.17.1). A more contemporary expression of maximal determinism is Max Tegmark's 'mathematical universe' hypothesis (Tegmark 2014), which would substitute 'the principles of mathematics' for 'God's eternal nature' in the above quotation. It is not clear where Spinoza or Tegmark would stand on the issue of causal realism, but the causal anti-realist who is a maximal determinist would ascribe logical necessity to causal relations as a feature of how some observers *interpret* 'the world', not of how the world would (ostensibly) be in the absence of observers.

This article's thesis carries no commitment to either account, but at face value the anthropomorphic approach has more flexibility to accommodate the variety of causal explanations in common usage, including maximally deterministic ones in sub-domains such as physics. It seems more plausible to suggest that the abstract notion of logical entailment is modelled on the more general idea of causation, rather than the other way round. Another advantage of the anthropomorphic thesis is that it accounts for some of the difficulties encountered in attempting to define causation without reference to *intention*, since on the anthropomorphic view the original domain of reference for causal terms would have been intentional actions. For example, in the anthropomorphic paradigm, to say "Dan caused the tree to fall" is to attribute an intention to the actor (equivalent to saying something like "Dan *wanted* to fell the tree"). Such an assumption implies that, as with anthropomorphisms in general, in *derivative* usages where the original unanthropomorphic notion is applied to phenomena that bear no observable intentional states (such as rainfall 'causing' floods), an intention is nevertheless *implicitly* attributed to the causal phenomena, though the intention is not *explicitly* acknowledged as part of the phenomena (at least in the materialist paradigm). If this implicit attribution of intention is *integral* to the notion of causation, then any general definition of 'cause' that makes no reference to such attributions would be indeterminate, and it is at least arguable (given the burgeoning and contentious literature on how 'cause' is to be defined) that such definitions are indeed incomplete.

Crucially, the reference to intention also avoids the charge of circularity, that the anthropomorphic account simply claims that the notion of causation is derived from the idea of human beings causing things to happen. Rather, the anthropomorphic view contends that what makes an act one of causation *is* the intention that accompanies or is attributed, explicitly or otherwise, to the act. In other words, it is the intention that makes an act one of 'causing' (specifically the intention to bring about the caused event, even if the intention is attributed only implicitly in an anthropomorphism). In much the same way (in the relevant respects), an intention to steal makes the corresponding act one of 'stealing'. So on this account, causation (as with theft) cannot be understood outside the realm of human intersubjective understanding or *verstehen* (that in the case of theft, for example, includes

the idea of 'ownership'), and is only *anthropomorphically* applied to relations between inanimate phenomena. So when the anthropomorphic account states that the notion of causation is derived from intentional acts of causing, it is making the non-circular claim that the *secondary* or anthropomorphic usage of 'cause' (which applies to inanimate phenomena) is parasitic upon the *primary* unanthropomorphic sense that applies in human inter-subjective contexts. It follows that in the absence of an intersubjective context, there can be no cause and effect (any more than there could be theft and stolen objects).

A further advantage of the anthropomorphic paradigm over maximal determinism is that the former more easily accounts for common intuitions about the characteristic features of causal relations. For example, the intuitions that cause and effect must be contiguous in space and time, and that cause precedes effect, both flow naturally from a notion of causation modelled on intentional human actions (where the intention logically and temporally precedes the act; and actor, action and the acted-upon are usually co-located) and less obviously from the concept of logical entailment. The arguments that follow do not presuppose the validity of either account, but the above discussion serves to demonstrate that causal anti-realism does not lack a corresponding theory of the specific origin of the notion of causation.

Nor does causal anti-realism entail a radical commitment to ending most common *usages* of causal terms, since causal anti-realism is compatible with causal pragmatism (Price 2001). Causal pragmatism emphasises the *practical* role that causal expressions play in advancing human interests, rather than the theoretical implications of such usages. For example, the causal pragmatist would typically interpret the question 'What caused the tap to leak?' as, in effect, asking 'What can we *do* to stop the tap leaking?' Alternatively, the statement 'Gravity causes the planets to orbit the Sun' could be construed pragmatically as 'Gravity [along with other variables] allows us *predict* the paths that planets take'. Interpreting a statement in practical terms is not equivalent to analysing it into an alternative proposition with the same set of truth conditions. So pragmatism does not *resolve* the debate between causal realism and anti-realism, because arguably some causal statements (for example, 'Causation occurs in a mind-independent external world') cannot be re-interpreted in pragmatic terms without ignoring truth conditions relevant to the debate. Nor does causal pragmatism render the debate *superfluous* to all human practical concerns. Admittedly, assumptions of causal realism or anti-realism are not salient in means-to-end reasoning towards immediate goals; but *some* of those goals are informed by longer-term ends that are possibly grounded in such metaphysical assumptions. For example, if causal anti-realism is true, the scientific program to reduce all natural phenomena (including human consciousness) ontologically to a single uniform sub-

structure, a project that governs the day-to-day practical goals of many scientists, may turn out to be fundamentally misguided in the sense that the ultimate objective can never be met. If the scientists involved had known in advance that the cause was futile, they might have chosen different practical goals.

Given the limitations of space, this essay will not defend causal anti-realism as a stand-alone theory, a subject of extensive and continuing debate in the philosophy of science (for a survey, see Esfeld 2012). Rather, the primary aim here is to highlight the conceptual connections between causal realism and problems in the philosophy of mind, in order to demonstrate the potential explanatory power of causal anti-realism. One of the attractions of causal anti-realism is that it obviates a number of philosophical difficulties by tracing their origin to a single source. These problems are centred on particular types of causal explanation. For example, the 'hard problem' of consciousness is the challenge of giving a satisfactory account of *causation* between physical events in the brain and events in first-person subjective experience. The problem of free will is one of giving a *causal* explanation of intentionality that is compatible with both physicalism and ordinary notions of free agency. An issue for mind-body dualism is that of mental causality, how nonphysical events such as thoughts can *cause* physical movements in the thinker's body. Having pointed out the central role that the notion of causation plays in these problems, this essay will now discuss the other side of the issue: causal anti-realism as an approach to these (and relevantly similar) difficulties. But first, some introductory remarks on the general philosophical advantages of causal anti-realism over causal realism.

The key contribution of causal anti-realism to philosophical methodology is the denial of real causation ('real' or 'really', from here on, denotes a causal realist frame of reference). In the absence of real causation, there is no need to reduce mental phenomena, conscious intentionality or mental agency to physical processes. For causal anti-realism, nothing is ontologically reducible to anything else because ontological reduction is a form of real causal explanation. So 'physical' or 'material' are not reductive ontological kinds in their own right, but are merely umbrella terms for a class of ontologically non-reducible natural kinds that meet certain criteria (such as having spatiotemporal extension and being resistant to force). It follows that the properties of 'matter' (in the everyday or proto-scientific sense of the term) are not reducible to its subatomic structure, even if matter is demonstrably composed of atoms, and its behaviour (in some respects) is explicable in terms of subatomic interactions.

Apart from its parsimony in potentially obviating a range of philosophical dilemmas, causal anti-realism has other methodological strengths. The theory is not committed to the

existence of unobservables, unlike causal realism, which claims that objects can have invisible 'powers' to produce effects. In this regard, causal anti-realism is more consistent with sound scientific methodology, which aims to conform beliefs about the nature of reality to the observed data, rather than attempt to filter the data through pre-existing assumptions about the reality of causation. Empirical observation is moving science away from, not closer to, the notion of causation as an inherent structural feature of reality. As John D. Norton points out, "When they need to be precise, fundamental sciences do not talk of causes, but of gravitational forces, or voltages, or temperature differences, or electrochemical potentials, or a myriad of other carefully devised, central terms" (Norton 2003, 3). Even the most abstract idea of causation, as determinism (whereby the future state of the universe is fixed by its present state), has been supplanted by the principle of quantum indeterminacy, by which even the most complete knowledge of the universe's past can at most yield a probability calculation of its future trajectory (Born 1969, 102). The phenomenon of quantum nonlocality, whereby two particles a great distance apart switch simultaneously to correlating states, casts doubt on the assumption that all natural phenomena obey the principle of causal contiguity, given that such quantum 'action at a distance' appears to be unmediated, though it is analogous to a causal relation (Cannavo 2009, 130). Physicists have also raised the possibility of retrocausality as a way of accounting for quantum indeterminacy, despite the widely held belief that causation only occurs from past to future. Rather than conclude that the universe is inherently indeterministic, some physicists developed the theory of Two-State Vector Formalism (TSVF), in which quantum indeterminacy arises from human ignorance about future events that contribute together with the past in determining the present (Aharanov & Vaidman 2008; Zeeya 2010). Though TSVF and nonlocality both preserve aspects of causality, they demonstrate that the notion of causation is contested and in flux, rather than being an inviolable set of clearly defined principles that must be adhered to in any explication of natural phenomena.

After comparing philosophical notions of causation with the scientific methods of his time, Bertrand Russell concluded that "the law of causality, as usually stated by philosophers, is false, and is not employed in science" (Russell 1913, 210). More recently, John D. Norton concurs with Russell that "the concepts of cause and effect are not the fundamental concepts of our science and that science is not governed by a law or principle of causality" (Norton 2003, 1). Having said that, Norton allows for the pragmatic application of causal laws.

> [Causal principles] are heuristically useful notions, licensed by our best sciences, but we should not mistake them for the fundamental principles of nature. Indeed we may

> say that causes are real to the same degree that we are willing to say that caloric or gravitational forces are real. (Norton 2003, 2)

The caloric view was an obsolete theory that heat consists of a self-repelling fluid (called 'caloric'), an account superseded by the mechanical theory that explained heat in terms of the kinetic energy of atomic particles (thus allowing for the conversion of heat into other forms of energy). The idea of gravity as a 'pulling' force was also superseded by Einstein's description of gravity as a feature of the curvature of space-time (so instead of being pulled, objects were moving along the curves). Nevertheless, in limited contexts, heat behaves like a self-repelling fluid and gravity 'pulls'. When doing practical or applied science in those situations, it can make sense to use the obsolete terms to focus attention on aspects of the phenomena that are of immediate interest. For example, an astronaut in orbit is concerned about the 'pulling' effect of Earth's gravity, rather than the finer points of Einstein's theory of relativity. But at higher levels of generality, the obsolete notions become highly misleading. So gravitational forces and caloric are 'real' as analogical models that can be usefully employed in limited contexts, not as general descriptions of the underlying phenomena.

In contrast, energy is a fundamental and measurable constant that is not rendered obsolete at higher levels of generality. In terms of its explanatory role and ontological status, causation is more like caloric and less like energy. The notions of cause and effect, gravitational force and caloric allow us to make sense of the world at (what is today) the level of folk science or proto-science, which serves immediate human interests, but if adhered to in all circumstances and at all costs, will also impede progress towards a more unified, general and sophisticated theory of natural phenomena (Norton 2003). Some may object that causal anti-realism falls short of Occam's Razor, since the theory has to contend with an abundance of ontologically non-reducible natural kinds, given that it disallows ontological reduction. However, as Norton points out, causal anti-realism is compatible with causal pragmatism, which allows for levels of analysis (for example, in terms of the molecular, atomic and subatomic) that can predict some of the behaviour of a wide range of natural kinds as correlates of interactions within a narrower range of entities (for example, subatomic elements). Such an account can be (and on the causal anti-realist view, is) constructed around relations of quasi-causation that meet certain heuristic criteria (possibly including the rules that cause and effect must be contiguous in space and time, proceed from past to future, and involve the transfer of 'energy'—all of which are subject to revision in the interest of predictive efficacy) without necessitating commitment to an infinite regress of ontological reduction in the futile task of grounding real causation.

From the general philosophical advantages of causal anti-realism, this essay will now turn to the potential contribution of causal anti-realism to specific problems in the philosophy of mind, beginning with the 'hard problem' of consciousness. The classic statement of the problem is that of David Chalmers.

> It is undeniable that some organisms are subjects of experience. But the question of how it is that these systems are subjects of experience is perplexing. Why is it that when our cognitive systems engage in visual and auditory information-processing, we have visual or auditory experience: the quality of deep blue, the sensation of middle C? How can we explain why there is something it is like to entertain a mental image, or to experience an emotion? It is widely agreed that experience arises from a physical basis, but we have no good explanation of why and how it so arises. Why should physical processing give rise to a rich inner life at all? It seems objectively unreasonable that it should, and yet it does. (Chalmers 1995, 201)

The foundational role of causal realism in the 'hard problem' is evident in Chalmers's statement "it is widely agreed that experience arises from a physical basis". The existence of the problem is premised on physicalism, which is in turn grounded in causal realism, the assumption that our conscious impressions (being causally inert) find their origin in causes outside consciousness, perhaps in 'physical' processes in the brain. Some experiences undeniably correlate with tangibly physical events, but such correlations do not present a 'hard problem'. The locus of the problem is the real causal connection that is presumed to exist between the brain and the mind. It is this connection that Chalmers finds "objectively unreasonable", and rightly so on the causal anti-realist account, which denies such a nexus.
Having said that, even if the real existence of a brain-mind causal nexus is denied, a question remains as to why consciousness is structured the way it is: as subject to external stimuli that trigger sensory experience, and as prompting movement in the thinker's body. Both these aspects raise a host of problems in the philosophy of mind, clustered around the task of giving a satisfactory causal explanation for the relevant phenomena. Causal anti-realism addresses this question in both a negative and positive sense, the latter having more explanatory power in accounting for the phenomena in question.

The negative response is causal eliminativism, the denial of a (real) causal nexus and therefore, of the need for a causal explanation. The positive approach identifies the relevant supposed phenomena (for example, sense-data, perception, consciousness, intention, and mental causation, described in the problematic philosophical rather than 'everyday' sense) as mechanisms that were *postulated* as part of (ultimately failed) attempts to explain the causal nexus, and therefore as philosophically redundant once the

nexus is eliminated. Causal anti-realism predicts that since a real causal connection cannot be directly perceived (because it does not exist), it will be assumed to be *hidden* in ever-more elusive and obscure phenomena along the purported causal chain—a prediction borne out in the history of both philosophy and the sciences (for example, in the progression of physics from atomic to quantum, and now string, theory). In the philosophy of mind, this process is evidenced by the sublimation of real causation into various mysterious phenomena along the mental causal chain, from sense-data through to mental causation (with subdivisions added constantly). On the causal anti-realist view, if the sole purpose of these ostensible phenomena is to serve as explanatory vehicles for causal processes that do not really exist, then the phenomena do not really exist either (at least not as causal mechanisms). In the philosophy of mind, the blind alleys encountered by attempts to explain causation in terms of such mediating phenomena (and vice versa) have led some philosophers to conclude the problem is irremediably beyond human comprehension, due to structural limitations in the cognitive faculties of homo sapiens, a position known as the New Mysterianism (McGinn, 1999).

Some physicalists may object that when applied to the sciences, the causal anti-realist account appears to cast doubt on the reality of atomic particles (given the explanatory role they play in physics as mediating vehicles for causation, and as the ontologically basic constituents of matter) despite apparent empirical evidence for their existence, including spectroscopic images (de Oteyza, Gorman, et al. 2013). In reply, the causal anti-realist could point out that as a *metaphysical* theory, one that purports to explain the real nature of phenomena, the atomic hypothesis runs into the observer effect. Atomic theory cannot account for the role that human cognitive faculties (as typically configured) play in structuring the observed data; because any human observer must rely on those very faculties in attempting to account for such a role. As a result, scientific theories cannot support metaphysical claims by simply appealing to *inductive* inferences from observed data. Such appeals do not, in themselves, override philosophical theories based on *deduction* (including ones that deny the validity of some inductive inferences, hence the possibility of philosophical scepticism). Most scientific accounts aim at making accurate predictions *within* human experience, and are therefore unaffected by the observer effect. But when scientists make metaphysical claims about the *veracity* of empirical theories, as accurately representing how the world is *apart* from human experience, then the claims overreach the empirical data and have to compete with philosophical theories on deductive grounds, (The differences in verification criteria between claims of predictive success and veracity also rule out appeals to the former in support of the latter, for example in the argument that atoms must really exist because atomic theory makes accurate predictions and is technologically useful.) So appeals to spectroscopic images and other empirical findings do

not conflict with the philosophical claim that atoms do not exist in the absence of observers. Even within standard quantum physics, it is now generally accepted that the observer effect confounds any attempt to draw a sharp distinction between 'mental' phenomena and purely 'material' processes (Henry 2005; Nadeau & Kafatos 2001, 198). As one scientific commentary explains, "It now seems clear that this radical separation between mind and world was a macro-level illusion fostered by limited awareness of the actual character of physical reality and by mathematical idealizations that were *extended beyond the realm of their applicability*" (Nadeau & Kafatos, 2001, 198; emphasis added).

We tend to believe that we *experience* mental phenomena, such as consciousness and its various contents (for example, 'perceiving', 'desiring' and 'willing'). If these phenomena do not really occur, how can they be experienced? One explanation, consistent with causal anti-realism, is that we *attribute* mental phenomena to ourselves as ex post facto heuristic rationalisations. In other words, we do not really experience mental phenomena; we *describe* ourselves (to ourselves) as having experienced 'mental phenomena' (as opposed to merely experiencing 'a cold shower' or 'being hungry', for example). David Hume famously made the same argument with regard to our 'perception' of causation.

> When we look about us towards external objects, and consider the operation of causes, we are never able, in a single instance, to discover any power or necessary connexion; any quality, which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find, that the one does actually, in fact, follow the other. (Hume 1748, Section VII)

Yet, we would not ordinarily hesitate to claim that we *perceive* causation. The causal anti-realist would agree with Hume; that we do not really perceive causation, but rather *impute* it to our experience out of a habit of mind (unlike Hume, causal anti-realism is agnostic about the source of that habit). In so far as ostensible mental phenomena are artefacts of causal realism, they too are *attributed to*, rather than *present in*, experience. This conclusion would not be surprising to clinical psychology, which has long known that conscious experience is constructed *retroactively* from sensory data (in some cases, with a gap of up to 150 milliseconds), a process known as 'postdiction' (Choi & Scholl 2006, 397). One psychological study, on the visual perception of causation, summarises its findings as follows.

> This illustrates a type of postdictive perception: our conscious perception of the world is not an instantaneous moment-by-moment construction, but rather is formed by integrating information presented within short temporal windows, so that new

> information which is obtained can *influence the immediate past* in our conscious awareness. (Choi & Scholl 2006, 385; emphasis added)

When all the artefacts of causal realism in the philosophy of mind are set aside (and the above examples are intended to be indicative rather than exhaustive), the coherence of the philosophical notion of 'consciousness' is thrown into question, given that the notion is *constructed* out of such artefacts. For causal anti-realism, 'consciousness' is not an inherent feature of reality, but a purposive *interpretation* driven by the need to explain the workings of real causation by postulating mechanisms that ultimately fail the task. On the causal anti-realist view, one does not really experience consciousness (in the problematic philosophical sense); one *applies the concept* of 'experiencing consciousness' to oneself, as part of a larger explanatory framework built around the assumption of real causation.

In the absence of real consciousness (excepting the clinical 'consciousness' of medical practice or empirical psychology, which is defined in terms of physiological symptoms and not philosophical concepts), the 'hard problem' is more accurately framed as a question about the *conceptual* origins of the idea of 'consciousness', rather than the *ontological structure* of consciousness itself. Only when the former issue is satisfactorily resolved, can the latter enquiry be fruitfully pursued (if necessary). Otherwise, causal anti-realism predicts, we will be increasingly entangled in our own failed explanatory strategies, as the illusion of real causation leads us into increasingly complex but unsatisfactory rationalisations.

The causal anti-realist approach to consciousness serves as a template for addressing other relevant dilemmas in the philosophy of mind. The first step in the approach is the identification (in the problem) of a basic assumption, that of the existence of a real causal nexus. The second (more complex) move is that of unearthing residual assumptions of real causation that have been sublimated into descriptions of the relevant mental states. The problem of free will offers an opportunity to demonstrate this approach once again.

The dilemma of free agency is grounded in the more general assumption that some events are really causally determined. If there are no such events, then there is nothing unique about acts of 'free will' in *not* being so determined. On the causal anti-realist view, the eruption of a volcano and a decision to have eggs for lunch are both really uncaused (quasi-realist causal explanations aside). 'Free will' is ordinarily ascribed to the latter and not the former, but for reasons other than one being really caused and the other not. The identification of the basic mistaken assumption, that of a real causal nexus among events in the 'physical' world (thereby raising the false dilemma that the act of 'willing' is either caused and thereby not

'free', or uncaused and therefore strangely exceptional) completes the first step in the causal anti-realist approach to the problem. Causal anti-realism denies a causal nexus in both directions, so the same step also obviates the problem of mental causality—how a nonphysical thought could cause physical movement in the thinker's body.

The second step interrogates relevant concepts such as 'willing' in order to unearth the sublimated causal realist assumptions inherent in such notions. Causal anti-realism would propose that the idea of 'willing' is an artefact of causal realism, since such artefacts are typically characterised as either antecedents or consequents of real causation, and willing is philosophically postulated to be an antecedent of mental causation. So the causal anti-realist would suggest that the statement 'I willed my arm to move' does not *describe* a real spatiotemporal event called 'willing', but is a heuristic *interpretation* of whatever happened. This causal anti-realist view is consistent with the psychological finding that a subject's brain activity, predictive of her performing a particular intentional act, actually occurs (in some cases, several hundred milliseconds) prior to her awareness of 'willing' the act (Libet, Gleason, et al. 1983). So the self-conscious 'act' of willing is an example of postdiction, an ex post facto *rationalisation* rather than the actual locus (if any) of the decision to perform the act. On the causal anti-realist view, a philosophical approach that treats such retroactive accounts as *descriptions* of actual mental phenomena will find itself chasing the ghost of real causation in ever-decreasing circles.

Causal anti-realism proposes that the only way out of such a vicious cycle is to recognise that the heuristic projections run deeper than initially thought, down to the idea of real causation itself. For causal anti-realism, the philosophical problems discussed above are conceptual artefacts of causal realism, of pushing heuristic strategies beyond the boundaries of their relevance. If fundamental philosophical concepts like those of 'matter', 'consciousness', 'free will' and 'mental causation' acquire their raison d'être as failed explanatory mechanisms that *sublimate* rather than explain real causation, then the likelihood arises that other closely related notions are equally redundant. In particular, the pivotal philosophical idea of 'the external world', which is constructed out of causal realist artefacts (chiefly 'matter' and 'consciousness'), would lose its point. The same redundancy would apply to materialism, which draws its impetus from the project of causal explanation through ontological reduction.

On the other hand, does causal anti-realism also invalidate idealism, which describes 'physical' entities (defined in the 'ordinary' or non-philosophical sense) as nothing more than intentional states? The issue of idealism is more complicated than that of materialism, because if the anthropomorphic theory is correct in claiming that 'causation' derives its

original and primary (that is, unanthropomorphic) meaning from *intentional* acts, then there is no prima facie contradiction in the idea that intentions can cause things to come into, and persist in, existence. For example, in the anthropomorphic account, it is not obviously logically impossible that the existence of a solid object be *wholly* attributable to an intention that the object exist and be solid. Some may disagree, arguing that such an attribution amounts to ontological reduction, and is therefore disallowed by causal anti-realism. The objection is not straightforwardly valid, since proponents of the anthropomorphic view might reply that the act of intending something into existence is *strictly* one of causation. Arguably, the thing caused to exist is not *ontologically reduced* by being described as an intentional state. Idealists would contend that the thing's properties as apprehended in experience *just are* what was intended, rather than being effects of some underlying structure with a *different* set of properties. Although an intention usually derives its significance or import from a larger network of intentions, idealism views *the world* as constituting such a structure (rather than the world being reductively analysable into a *different* structure called 'the mind'). On such a view, and as intimated by the arguments in this paper, what is traditionally called 'the conscious mind' does not really exist, but is a *narrative* marked by obscurity, confusion and delusion. As the topic is beyond the scope of this paper, a more detailed analysis of the anthropomorphic thesis and its implications for idealism will have to be left as a suggestion for further research. Suffice it to conclude, if our conceptual schemes (particularly in philosophy) are riddled with artefacts that serve no purpose, other than to conceal the non-existence of real causation, then the fact needs to be taken into consideration (in the manner outlined above) in the analysis of many traditional philosophical problems, if they are to be satisfactorily resolved.

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